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CHANGING PERSPECTIVES: INSTITUTIONAL LOGICS OF ADOPTION AND USE OF HEALTH INFORMATION TECHNOLOGY

Completed Research Paper

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Abstract

In this study, we evaluate the adoption of IT resources within the U.S. healthcare system from the perspective of institutional logics. Our analysis focuses on the impact that increased use of electronic health records (EHR) systems and other health IT have on the interactions between diverse stakeholders and the values and objectives driving EHR adoption. Our findings suggest a broader range of institutional logics than has been highlighted in previous research within the healthcare field. We see evidence of both conflicting and complementary logics in the move to an IT-intensive healthcare system. We use our field study findings to support preliminary theorizing about the dynamic interplay of multiple institutional logics in the healthcare domain. The research underscores the value of analyzing institutional logics from a systems-oriented perspective.

Keywords: Electronic health records, Health IT, Institutional logics, U.S. healthcare system

Introduction

The U.S. healthcare market is experiencing substantial growth in information technology (IT) investment and implementation. While administrative and financial information systems have been in use for some time in healthcare, the current growth of IT investment centers on clinical systems such as computerized physician order entry (CPOE), clinical decision support systems (CDSS), and electronic health records (EHR) systems (Berner et al. 2005). For decades, researchers have emphasized the potential benefits of such clinical IT, including the reduction of decision-making errors (Dick et al. 1997; Shortliffe 1999); improved communication within medical institutions (Thompson and Brailer 2004); improved accuracy and legibility of patient documentation (Shortliffe 1999; Varon and Marik 2002); and broad improvements in quality of care (Anderson 2004; Miller and Sim 2004).

In addition to the pursuit of these benefits, the current wave of healthcare IT adoption is driven by recent governmental efforts to promote clinical IT. The past two presidential administrations have placed a strong emphasis on expanding the use of IT in healthcare as a means of confronting the rapid rise of healthcare costs. This emphasis has included both administrative and legislative measures to incentivize adoption of EHR platforms and other clinical IT resources.

As the healthcare community continues to adopt advanced IT solutions, many questions remain regarding the impact of these technologies on the delivery of healthcare services. In particular, given the networked structure of the healthcare marketplace, how will the introduction of such technologies impact the local actions and systemic interactions of diverse stakeholder groups? The present study pursues an exploration of these dynamics. Specifically, our research is guided by the following research questions:

- What impact does the increased adoption of EHRs have on interactions between healthcare stakeholders, including patients, providers, payers, regulators, system intermediaries?
- What are the values and objectives driving EHR promotion and adoption by these various stakeholders?

To address these questions, we conducted an exploratory field study of diverse healthcare stakeholders with an eye to their current and planned IT investment and implementation, as well as their broader IT governance practices. In analyzing our data, we adopt an institutional logics perspective (Friedland and Alford 1991; Thornton and Ocasio 2008) to discern the socially-constructed practices and values that guide the distinct institutions and associated individuals within the healthcare market.

In the next section, we offer a brief overview of the U.S. healthcare system, including key stakeholder groups and prevailing trends. This is followed by an introduction to the concept of institutional logics that forms the core of our theoretical analysis. We then present our research methodology before moving to a delineation of findings. We provide a Discussion section to highlight key implications from the research as well as perceived limitations. Finally, we conclude with the essential insights from the research.

Healthcare and Information Technology

The U.S. healthcare system is a prominent topic in contemporary news coverage. Healthcare costs have been rising faster than the GDP for over 40 years, and the United States has higher costs for healthcare than any other developed country (Sutherland et al. 2009). Yet, these expenditures do not result in better healthcare outcomes (GAO 2005). Given this discrepancy, calls for fundamental improvement to the healthcare system have been a regular feature of political and public discourse for over two decades. The Institute of Medicine (IOM; 2001) has argued for major changes to the organizational structures and processes of healthcare systems and a dramatic increase in the role of IT. Citing evidence that between 44,000 and 98,000 Americans die each year from preventable medical errors (Kohn et al. 2000), the IOM emphasizes the need for broad system redesign to improve processes and enable innovation, including a call for increased IT use in the form of information and records management, computerized physician order entry (CPOE), and physician decision support systems (Corrigan 2005).

Given this call for action, how can such sweeping and systemic change be implemented? The U.S. healthcare system is very complex, with a diverse set of stakeholder groups, including healthcare service

providers (e.g., individual physicians, group practices, hospitals), specialized clinical organizations (e.g., testing laboratories, long-term care facilities), payers (e.g., private insurance companies, Medicare and Medicaid programs), and credentialing entities (e.g., Joint Commission on Accreditation of Healthcare Organizations; JCAHO). These stakeholders interact in complex ways to provide healthcare services to individual patients. The healthcare system also involves a significant regulatory structure, with extensive oversight by state and federal agencies.

Government action has been a primary vehicle for advancing proposed healthcare system changes. While federal healthcare reform efforts go back several decades, the role of IT in such reform gained significant focus under President George W. Bush. To foster development of an integrated national health information system, the Bush (43) Administration created the Office of the National Coordinator of Information Technology (ONCHIT) within the Department of Health and Human Services (Bush 2004). With the passage of the 2009 American Recovery and Reinvestment Act (ARRA) under President Obama the ONCHIT received renewed emphasis (Blumenthal 2009; Steinbrook 2009).

Contained within ARRA is the Health Information Technology for Economic and Clinical Health (HITECH) Act which focuses on improving U.S. healthcare through unprecedented investments in IT (Blumenthal and Tavenner 2010; Steinbrook 2009). HITECH allocates $19 billion in funding for implementation of IT and EHRs, aiming for 90% of physicians and 70% of hospitals to use comprehensive EHRs by 2019.[1] HITECH mandates implementation of EHR platforms as a condition for Medicare and Medicaid reimbursement. In addition, the legislation introduces the concept of *meaningful use* as a set of incentives and penalties to enable compliance with this mandate (Classen and Bates 2011; DesRoches and Miralles 2011).To accomplish these goals, the ONCHIT has been charged with leading the development of national standards for health information exchange, directing expansion of the national health IT infrastructure, and strengthening privacy and information security around the exchange of health information.

Currently, the U.S. healthcare system is a long way from achieving the HITECH goals. DesRosches et al. (2008) found that only 4% of physicians report having a fully-functional EHR and 13% reported having a basic system. Jha et al. (2009) observed similar patterns of EHR use amongst U.S. hospitals, with only 1.5% of hospitals having a comprehensive EHR system and an additional 7.6% having a basic system that included functionality for physicians' notes and nursing assessments in at least one clinical unit. In addition, the evidence surrounding EHR system benefits is mixed. Several studies highlight perceived benefits of EHR use, such as higher quality of clinical decisions, improved communications with patients and other providers, avoidance of medication errors, and improved quality of medical coding (e.g., Cebul et al. 2011; DesRoches et al. 2008; Miller and Sim 2004). However, other research argues that the observable impacts are limited (Chen et al. 2009; Linder et al. 2007; Miller et al. 2005) or in some cases detrimental to quality of care, because of challenges in automation of decision making (Lenz and Reichert 2007), information overload for providers (O'Malley et al. 2010), and the undermining of rapport between physicians and patients (Shachak and Reis 2009).

Institutional Logics and Healthcare

To understand how the decisions related to HITECH and EHR adoption by individual organizations integrate at the industry level requires a systems-oriented perspective. Accordingly, we propose the theoretical framework of institutional logics. In this section, we provide an overview of the theoretical perspective that guides our research and an illustration of its previous use in the healthcare context.

[1] The terms electronic medical records (EMR) and electronic health records (EHR) are often used interchangeably. Both include the electronic rendering of patients' medical records. While EMR generally refer to data management systems *within* a given organization, EHR adds the exchange of records across organizations (Garets and Davis 2006). Within HITECH, the goal of an EHR is a longitudinal record of the health status and care for an individual, including care provided by multiple providers. In light of its more inclusive framing, we employ the term "EHR" throughout this paper. While the present study has implications for other clinical IT systems, our analytical efforts were oriented specifically toward the impact of adoption, use, and argumentation around EHR technologies.

Institutional Logics

In the present research, we pursue an analysis of respondents insights through the theoretical framework of institutional logics (Friedland and Alford 1991; Thornton and Ocasio 2008). Specifically, an institutional logics framework is employed, because the theory provides a mechanism for evaluating the ways in which values, behavioral norms, and assumptions influence organizational and institutional change over time (Thornton et al. 2005).

The concept of an *institutional logic* emerged from within the broader study of *institutional theory* or *neoinstitutionalism*, which posits that organizational structures and practices are influenced by institutional forces – socially-constructed rules and myths guiding action within an institutional context (DiMaggio and Powell 1983; Meyer and Rowan 1977; Scott 2008). Within this research, *institutions* are understood as "supraorganizational patterns of activity rooted in material practices and symbolic systems by which individuals and organizations produce and reproduce their material lives and render their experiences meaningful" (Thornton and Ocasio 2008: p. 101). Building upon this view, *institutional logics* reflect the foundational ways of thinking and acting, or belief systems, that characterize various institutions (Friedland and Alford 1991).

Building upon the work of Friedland and Alford (1991) and Jackall (1988), Thornton and Ocasio (2008) offer a comprehensive definition of *institutional logics*: "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality" (p. 101). They highlight several recurring characteristics of an institutional logics perspective, including embedded agency (i.e., the agency of organizational actors is embedded within a prevailing logic), the multi-level nature of institutional analysis (i.e., institutional logics may be analyzed at multiple levels of society – e.g., individuals, organizations, geographic communities, organizational fields), and historical contingency (i.e., institutional logics are not set in stone; they change over time).

These characteristics are relevant for the current analysis. On the issue of multi-level analysis, the present study focuses on developments within the organizational field of U.S. healthcare, but incorporates consideration of multiple organization types within that broader field. With respect to historical contingency, the current state of flux within the U.S. healthcare marketplace, particularly around the adoption of advanced IT solutions and the corresponding changes in inter-organizational information flows, represents an environment in which distinct institutional logics are being exchanged, combined, and contested. Accordingly, an institutional logics perspective provides a mechanism for evaluating the restructuring of relationships in the healthcare environment and power dynamics that emerge with the adoption of new IT solutions.

Applications of Institutional Logics in Healthcare

Several studies have applied the concept of institutional logics in the healthcare domain. Ruef and Scott (1998) study hospital survivorship as a function of the correspondence between the mission or focus of an organization (i.e., the prevailing institutional logic within a hospital) and the dominant logic of the broader institutional environment. They argue for a shifting in the dominant logic of U.S. healthcare over three distinct eras. This study was outlined in greater detail in the authors' widely cited book (Scott et al. 2000). Currie and Guah (2007) draw heavily upon Scott et al. (2000) in analyzing the conflicting institutional logics confronting efforts by the UK's National Health Services (NHS) to create and implement a large records management and information sharing platform.

In a pair of studies, Reay and Hinings (2005; 2009) analyze the dynamics of competing institutional logics within the Canadian healthcare system. Specifically, they focus on the emergence of a governmentally-supported logic of *business-like health care* which challenged the previously dominant logic of *medical professionalism*. The first study (Reay and Hinings 2005) emphasizes the shift in legitimation toward the relative dominance of the business-like health care. However, in the latter study, Reay & Hinings (2009) reveal how competing logics can co-exist through the creation of collaborations which permit distinct groups to maintain their separate logics while focusing on common objectives.

Nigam & Ocasio (2010) highlight the emergence of an institutional logic of *managed care* to compete with the dominant logic of *physician authority* (i.e., equivalent to the medical professionalism of Reay &

Hinings (2005)) in Clinton-era healthcare reform. Combining the theoretical frameworks of institutional logics and sensemaking (Weick 1995), Nigam & Ocasio (2010) illustrate how the logic of managed care rose to prominence in the wake of Medicare's implementation of the Prospective Payment System and President Clinton's healthcare reform initiatives. The combination of institutional logics and sensemaking was similarly applied by Jensen, Kjærgaard, & Svejvig (2009) in a case study of an electronic patient record (EPR) system in a mid-sized Danish hospital. Jensen et al. (2009) find conflicting institutional logics of a *private sector ethos* and the typified role of doctors (again, analogous to *medical professionalism*). The study by Jensen et al. (2009) reveals how an institutional logics perspective can help evaluate the impact of IT adoption in the healthcare context.

Research Methodology

To explore the current state of clinical IT use and its systemic impacts, we conducted a series of semi-structured interviews with diverse professionals in and around the healthcare marketplace. Data collection efforts were structured around an interview protocol jointly developed by the researchers. The interview protocol was designed to elicit responses to a number of distinct aspects of the professionals' service delivery and healthcare IT experiences, including approaches to IT investment and implementation, drivers for IT adoption, systems integration objectives, IT-based organizational challenges, and approaches to collaboration with other entities. The core protocol remained constant throughout the data collection; however, in line with the concept of constant comparison, some questions were added to the protocol based on insights from the initial interviews (Glaser and Strauss 1967). In addition, interview respondents were encouraged to express their thoughts on any topics which they felt were relevant regarding the use of IT and information exchange within healthcare environments. In light of conference length restrictions, inclusion of the interview protocol with this manuscript was deemed infeasible. However, the protocol will be made available on request.

To foster external validity and to address threats to the internal validity, we sought participation from individuals and firms engaged in a variety of healthcare-oriented environments, including clinicians, healthcare IT managers, healthcare payers, and information intermediaries. A total of 12 interviews (generally one to one-and-a-half hours in duration) were conducted. A summary of the interviews is provided in Table 1. A "snowball sampling" technique (i.e., leveraging initial respondents within each stakeholder domain to suggest other possible respondents for inclusion in the study) was employed in this research (Noy 2008). In order to protect the confidentiality of the respondents, no quotes or statements from the interviews are attributed to specific individuals or firms. A secondary data set was also analyzed as part of our study. Specifically, we analyzed a number of extant government documents highlighting the key federal initiatives around healthcare IT. The sources were deemed relevant, because they embody the objectives and logic for the advancement of IT use in the healthcare sector.

Table 1. Interview Respondents Summary - Respondent Labels and Gender

Elder Services IT Director 1 [Male]	Hospital System IT Director 1 [Female]
Elder Services IT Director 2 [Male]	Hospital System IT Director 2 [Female]
Health Service Provider 1 [Male]	Hospital System IT Director 3 [Male]
Health Service Provider 2 [Female]	Rural Hospital IT Director 1 [Male]
Health Service Provider 3 [Male]	Rural Hospital IT Director 2 [Male]
Healthcare BPO Provider VP of Innovation [Female]	RHIO IT Director [Male]

All interviews were transcribed for formal data analysis. Interview transcripts and external sources were coded using NVivo, a qualitative analysis application. For the interview data, the interview protocol served as the preliminary coding structure. Additional codes were created as specific themes or recurring issues were identified. The coding centered on a thematic analysis of the field study data (Boyatzis 1998). While

the thematic analysis was conducted in line with key principles of grounded theory methodology (Glaser and Strauss 1967; Strauss and Corbin 1990), such as constant comparison and open, axial, and selective coding, it differs from a pure grounded theory approach in that the analysis was informed by the conceptual framework of institutional logics. The code structure was iteratively revised until the researchers determined that all relevant themes were reflected (Eisenhardt 1989). The transcripts and other source documents were coded repeatedly as the final coding structure emerged. The aim of this analysis was to identify distinct institutional logics and related factors with respect to the use of IT in the support of healthcare services. All of the institutional logics identified in the Findings section were grounded in the data and the comments of our study respondents.

Findings

The present study provides a number of key insights regarding the institutional logics employed within the U.S. healthcare market. In this section, we discuss the observed institutional logics before turning to initial theorizing regarding the relationships between them.

Institutional Logics

The analysis of our data reveals several distinct institutional logics at play in the contemporary healthcare system. While a number of these observed logics, such as medical professionalism (Nigam and Ocasio 2010; Reay and Hinings 2009) and a private sector ethos[2] (Jensen et al. 2009) have been observed in other research of the healthcare environment, other logics that we discerned have not yet been identified in applications of the institutional logics perspective.

Boundary Spanning

One of the most prominent themes in our study is a core focus on *Boundary Spanning* – i.e., an institutional logic centered on the desirability of information exchange across professional, disciplinary, and organizational boundaries. Drawing upon this institutional logic, individuals argue for the benefits that organizations and the broader healthcare system can achieve by breaking down traditional information silos. As our definition suggests, this logic is operative at several distinct units of organizational analysis and widely observed at multiple levels. Within healthcare organizations, respondents highlighted efforts to improve information exchange between distinct professional categories, such as nurses, primary care physicians, specialty physicians, and administrators. Similarly, respondents discussed bounding spanning across distinct business units, such as clinical departments, labs, and hospital billing. At the level of the organizational field (i.e., the healthcare system), an emphasis on boundary spanning is seen in the drive for greater integration of data across organization types, such as providers (e.g., physicians, hospitals), insurance payers, employers, and government agencies. The following statements illustrate this institutional logic:

> *"Everything has to work together. So, we see on the clinical side for example, there's a great relationship between CPOE, pharmacy, medication administration, nursing, clinical care, that type of thing and order management, that's all tightly integrated … Everybody's got to do that together because the left hand has to know what the right hand's doing." – Hospital System IT Director 2*

> *"I would see integration as … how those three layers – the physician aspect, the nursing aspect, and the front staff/billing aspect – exchange information. The data would have to flow through all three of those layers; both from physician down and from billing up, and the data would need to be able to move through all three groups." – Health Service Provider 2*

[2] While our findings resonate with the concept of a "private sector ethos," we have opted for the alternative label of "economic advantage," because it is not clear that the values and guiding principles associated with this logic are appropriately limited to a private sector context.

> *"*[The patient data is] *not stuck in the silos or the physician practice but it crawls across that – across the silos – and that information is being shared with the greater community so that it'll help the patients at the right time with the right information when it's needed." – RHIO IT Director*

As we will discuss in greater detail in later in our findings, the institutional logic of boundary spanning has affinities with other logics revealed by our respondents. In this way, boundary spanning may function as a higher-order logic supported by other logics for institutional action.

Community Orientation

Closely related to the focus on boundary spanning, we identify a strong emphasis on community-based action in the development and implementation of healthcare IT. We define *Community Orientation* as an institutional logic emphasizing shared decision-making and interdependence among communities of diverse stakeholders. This logic is marked by a focus on team structures, collaborative work, and shared responsibility for outcomes. In line with a team perspective, we also observed an emphasis on empowering individuals to take action through a blurring of strict role distinctions. Finally, the logic of community orientation reflects a clear premium on the maintenance of positive interpersonal relationships between members of different stakeholder groups. The following statements provide an illustration of this institutional logic:

> *"Our model not only transforms the physical organization, we've also transformed the operational organization – redefined everyone's roles into more of a complete team member role where the traditional line between all of those roles, nursing, social work, therapy, etc., come together now in a team environment to collaboratively work with the elders." – Elder Services IT Director 2*

> *"One of the first things that we did – and we've kept it from the beginning, when we first started looking at what our solution was going to be – was form a multi-disciplinary team. And although it is large, because there are a lot of disciplines, you cannot do it any other way. These decisions are not IT decisions. And they can't be." – Elder Services IT Director 1*

Importantly, the logic of Community Orientation was observed at multiple levels of organizational analysis among our respondents. This logic was invoked in discussing both the stakeholder groups within a distinct health care organization and the interdependence of diverse organizations within the broader health care community of a geographic region.

Compliance

A third institutional logic amongst several of our respondents we identify as the logic of *Compliance*, in which individuals or organizations identify compliance with existing (and anticipated) laws, governing bodies, or industry practices as the guiding principle for their IT investment actions. The idea in the logic of compliance is that organizations take action primarily because they feel they *have to*, with other envisioned advantages that the actions might engender (e.g., increased quality of care, cost control) taking a secondary position. This logic underscores the central role that governmental entities play in directing the IT efforts of individual healthcare organizations. In this context, governmental entities include health administrators at the state (e.g., State Health Departments) and federal (DHHS) levels as well as government-based payers, namely, the Medicare and Medicaid programs. This logic of compliance was particularly relevant regarding investment in EHR platforms, because of meaningful use requirements. The following statements are illustrative of a compliance emphasis:

> *"HIPAA guides a lot of the way things have to be set up. Also, the Joint Commission* [JCAHO]. *That is huge. That governs how we do a lot of things. Not necessarily IT wise. Some of it trickles down into IT. But they're the king. The reason they're the king is because Medicare, Medicaid, and CMS will not pay you if you're not JCAHO-certified." – Rural Hospital IT Director 1*

> *"The logic* [for IT investment] *goes away, and the reason is we're being pushed – we don't want to do this! We're happy with our system. But we're being pushed by the government, and the insurance companies, and the payers … It's not for us, it's for them." – Health Service Provider 1*

> *"The goal of our project really is to meet meaningful use. That includes patients' safety and quality obviously. That's the driver within meaningful use … improving your [standing] in that and achieving meaningful use." – Hospital System IT Director 2*

As these statements illustrate, the logic of compliance is often accompanied by secondary or associated motivations, such as a desire to generate revenue or control costs, which are explored later in this section.

Cost Control

Much of the discussion surrounding the U.S. healthcare market in recent years has centered on the need to address skyrocketing system costs. Consequently, it is not surprising that cost control is a significant focus for many of the respondents in our study. In our analysis, the institutional logic of *Cost Control* reflects a core consideration in the management and support of IT around the desire to reduce costs within an organization or in the broader healthcare system. This logic is reflected in concerns about the high cost of service delivery, opportunities for cost reduction through IT investment, and attention to the costs of ongoing systems maintenance. Cost control is also seen as one of the primary drivers for participation in Regional Health Information Organizations (RHIOs), multi-stakeholder clinical data exchanges established within a metropolitan region (Adler-Milstein et al. 2009). Several comments from our respondents attest to a focus on cost control. For example:

> *"There's all kinds of pressure on reimbursements and lowering costs of health care. And the government, being one of the primary payers, also being one of the stingiest – we have to find ways to cut costs … So you're running around implementing this stuff* [i.e., EHRs] *but the cash isn't coming back in as fast* [as it is going out]. *That's a big challenge." – Elder Services IT Director 1*

> *"Yes, when it started out, they [i.e., local business and healthcare industry leaders] all kind of came together with the common goals saying 'We need to exchange data to lower health care costs in our community, goal number one. How do we get to that goal?' Well, we form our health information exchange; we form a RHIO in our community." – RHIO IT Director*

> *"When doctors and hospitals use health information technology (IT), patients get better care and we all save money." – ONCHIT Document*

Not surprisingly, the institutional logic of cost control is closely linked to a broader logic of economic advantage. However, given the heavy emphasis on costs in our respondents' comments and the broader U.S. healthcare system discussion, we determined that the logic warranted a dedicated identification.

Economic Advantage

In addition to the focus on cost control, respondents revealed a premium on the potential economic benefits of investment in healthcare IT. The institutional logic of *Economic Advantage* can be characterized as consistent emphasis on return on investment (ROI) and thorough economic justification of IT investment decisions. This perspective includes invocation of a wide variety of concepts, including efficiency, revenue generation, intellectual property, and business process innovation. As we have noted earlier, the logic of economic advantage is similar to the *private sector ethos* discussed by Jensen et al. (2009). The following statements provide an illustration of respondents' comments embodying this logic:

> *"The first piece* [of an IT investment] *would be to formulate a business case. It won't go anywhere here unless it has a business case for the return on investment." – Rural Hospital IT Director 1*

> *"The other aspect of the sales pitch [for EHR systems] is that you'll be able to make more money. You'll make up the money by billing more." – Health Service Provider 1*

The emphasis on efficiency within the logic of *Economic Advantage* reveals a possible point of conflict between the perspectives of different stakeholders within the healthcare sector. Among our respondents this was particularly relevant on the topic of EHR investment. While EHR implementations are advanced by payers and the federal government as a route to more efficient operations, some respondents expressed

concern that EHRs *reduce* the efficiency of service providers. For example:

> *"The whole thing is bogus. It's not just our system. The biggest, most expensive system out there that the hospitals are buying. It's junk! It used to be that you could get a consultative note in one page in free hand and you knew exactly what that doctor did, thought, and directed. Now you get three page notes. You can't sort through that whole thing to figure out what the hell they did and where they're going. It's worthless." – Health Service Provider 1*

> "[An EHR system is] *great for capturing diagnosis and procedure codes … So, from the perspective of why it's being designed, they solved it. But from the perspective of rendering care, in a setting where other people are going to have to use what you have written … when you've got 3,000 words on a page and only two of them are important, you don't read it." – Health Service Provider 2*

The emergence of countervailing arguments, both invoking the logic of Economic Advantage, suggests that it is not sufficient to analyze institutional logics in isolation within the healthcare domain. *Rather, the ways in which distinct logics are employed in combinations and the ways that conflicting perspectives interact have significant implications for our understanding of competing viewpoints on the proper role of healthcare IT.*

Medical Professionalism

Consistent with extant research on institutional logics in healthcare, we see evidence of an institutional logic of *Medical Professionalism* – a core focus on the role of the physician in guiding the delivery of healthcare services (Nigam and Ocasio 2010; Reay and Hinings 2005; Reay and Hinings 2009). In this logic, the autonomy of the physician in direct consultation with a patient is seen as paramount. It is the professional judgment of a physician that should determine the appropriate strategy for care and treatment of a patient, with determinations regarding the proper role of IT resources resting with the individual clinician. Furthermore, this perspective assumes that "it [is] the role of government to provide sufficient funds to meet the need determined by physicians" (Reay and Hinings 2009: 630). This institutional logic was repeatedly observed in the comments of our respondents, including both service providers (i.e., clinicians) and other professionals within the healthcare system.

> *"Really, this became clinically driven, more than administratively or financially because of the emphasis now on the electronic medical record. So, in the end, the clinical needs and physicians' preferences were really the drivers for the decision." – Hospital System IT Director 2*

> *"That was one of the criteria [for vendor selection] obviously, the clinical decision and support and ability to provide the information system for our physicians and clinicians was paramount." – Hospital System IT Director 2*

Consistent with past research, the logic of medical professionalism represents a key point of conflict with other drivers of IT adoption in the healthcare system. Physicians express concern that their needs have taken a back seat to desires of other stakeholders, such as insurance payers and governmental administrators:

> *"The EMR with the templates – it generates many, many words, but it doesn't say anything. It doesn't communicate anything. It doesn't tell the nurse 'Gee,* [the physician speaking] *was really worried about this [patient]. I could tell by the way she had listed this, this, and this, and had asked about this and asked about this. I got a sense.'" – Health Service Provider 2*

Patient Orientation

The logic of medical professionalism is closely related to a focus on the needs and values of the patients. Ultimately, the healthcare needs of individual patients represent the primary driver of any healthcare system. The institutional logic of *Patient Orientation* refers to an emphasis on the interests of patients in healthcare and health IT-oriented decision making. Central themes in this logic include a focus on what is most convenient for the patients, maintenance of privacy and information security around patient

records, and increasing the quality of care provided. This perspective implies that the perspective of the patients should trump the views of other stakeholders within the system (with the possible exception of physicians, whose objectives are assumed to align with those of patients. The following statements provide an illustration of this perspective:

> *"The organizational change is really geared towards putting an elder at the focus of the decision-making, and getting away from the institutional model of, 'We get people up at this time. We serve dinner at this time.' It's going to impact us fairly dramatically because IS has also been institutional in structure. In the new philosophy, we need to be a lot more flexible and more responsive to our customers in terms of what they need to do with technology." – Elder Services IT Director 2*

> *"I view integration as the IT piece of the continuum of care, so the patient goes from their doctor's office to the hospital maybe for short term rehab, maybe the long term rehab … We want to make sure that their record and their information follows them the entire way. So that whoever is providing care to them has the most accurate and up-to-date information as possible." – Rural Hospital IT Director 1*

> *"That information is being shared with the greater community so that it'll help the patients at the right time with the right information when it's needed … You're looking at the patient care and you're looking at doing things for the greater good." – RHIO IT Director*

The logic of Patient Orientation revealed by our respondents is mirrored in the advocacy of greater health IT adoption by the federal government.

Technical Excellence

The final institutional logic revealed in our analysis focuses on the technical value of designs in the development, implementation, and maintenance of IT infrastructure within the healthcare domain. *Technical Excellence* refers to an institutional logic emphasizing the quality of technical solutions and information system designs. Amongst our respondents, this logic is reflected in several related lines of inquiry, including concerns for an entity's status vis-à-vis the state-of-the-art in organizational IT use, access to specific IT functionality, the value of a communications infrastructure, and the technical quality of vendor-based platforms. Perhaps not surprisingly, this logic was primarily observed amongst respondents with a significant IT responsibility within their respective organizations. For example:

> *"*[The RHIO Executive Committee] *will give the general guiding principles of what they would like to accomplish and it's really up to us, as the keepers of the RHIO to figure out how to make it happen. I'll pull in* [the RHIO's data exchange vendor] *to figure out how can we do all that technically. Or I'll pull in a vendor, like* [two specific EHR vendors] *down here to say, 'OK, this is what we have, this is how we're going to do it technically. How are we going to get here?' I also have committees comprised of IT professionals from all these* [RHIO participating] *organizations and I'd say, 'What's the best technical approach to take on this?'." – RHIO IT Director*

As these statements reveal, the logic of technical excellence is closely aligned with a logic of economic advantage (esp. efficiency), because IT personnel are seeking to evaluate which technical designs support the greatest efficiency of information flow. Interestingly, this emphasis on efficiency in technical design is perceived sometimes to be at odds with other organizational imperatives. For example:

> *"Still to this day we're on paper timecards, despite the fact that* [our EHR vendor] *has a payroll system that's integrated with automated timekeeping. Some department heads, including me, bring up periodically how we could be doing a much more efficient job of payroll timekeeping. The organization historically has been opposed to it because they don't want to give the employees a sense that they're not trusted. Despite the fact that it's costing a huge amount of time and there's always going to be people that are not trustworthy." – Rural Hospital IT Director 2*

Preliminary Theory Development

Within the literature on institutional logics in healthcare, much of the research has focused on competition or co-existence between a very limited number (most commonly, two) of prominent

institutional logics (e.g., medical professionalism vs. business-like healthcare; Reay and Hinings 2009). However, our analysis suggests that viewing institutional logics in this dichotomous fashion may obscure the dynamic interplay of assumptions, values, rules, and organizing principles within an organizational field. Within a single business unit, organization, or organizational field, multiple institutional logics may be employed simultaneously and intertwined to support the actions of the broader social group. For example, as our findings highlight, an institutional logic of *boundary spanning* can be variously supported by other logics such as those of *economic advantage*, *cost control*, and *patient orientation*.

The question then remains: How can we pursue a more nuanced (and less dichotomous) understanding of the interplay of institutional logics in the U.S. healthcare field? In an effort to address this question, we present some initial theorizing building upon the evidence from our study. Figure 1 presents a graphical representation of the relationships between the institutional logics displayed in our analysis.

In considering the institutional logics observed within our study, we are interested in evaluating the conceptual affinities between them – e.g., the degree to which they support or undermine the assumptions and organizing principles of one another or the tendency for them to be invoked together or in juxtaposition. Figure 1 illustrates key systemic relationships between the logics that we observe and the stakeholders groups by whom these logics are adopted

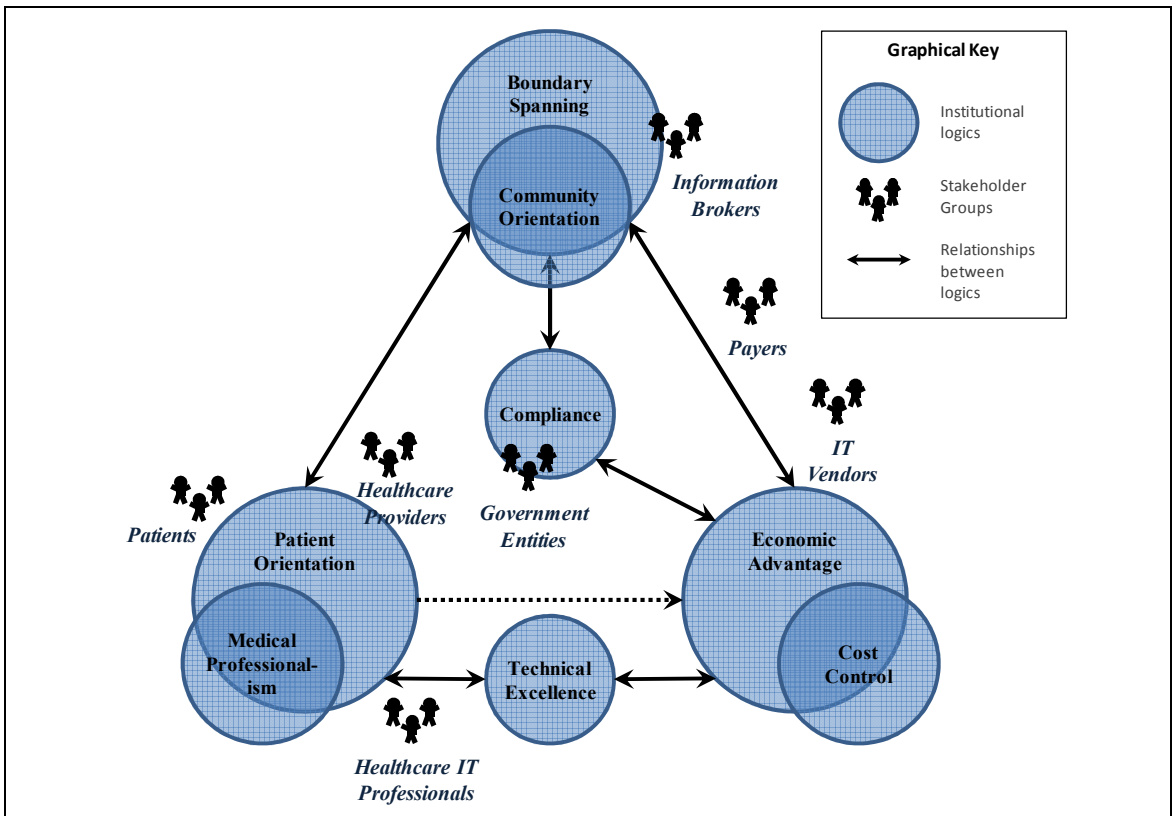

Figure 1. A Systems Perspective of Institutional Logics in U.S. Healthcare

In our data, we observe a number of dyadic pairings of institutional logics – pairs of logics regularly invoked together and which reinforce one another. The pairing of logics is a byproduct of our analytical treatment, in that we identify logics repeatedly invoked in association with distinct stakeholder groups. First, the logic of *boundary spanning* is closely linked with that of *community orientation*. The pursuit information flow across traditionally professional, disciplinary, and organizational silos favors the creation of multi-disciplinary teams and other community-based approaches to decision making. Secondly, we see a clear link between the logics of *cost control* and *economic advantage*. This affinity is not surprising – as we have noted, costs control can be understood as one vein of economically-justified

argumentation. Thus, cost control and revenue generation or ROI are two sides of single coin – one which has elsewhere been referred to as *business-like healthcare* (Reay and Hinings 2005; 2009). Finally, we see a third strong affinity between the logics of *patient orientation* and *medical professionalism*. This affinity is grounded in the perception that autonomy for medical professionals in deciding the best course of action in medical treatment aligns with the best interests of patients, whereas other logics (e.g., cost control) may reflect less concern for patients' preferences. Beyond these dyadic associations, we observe that distinct logics (or logical dyads) may be associated through common invocation or use.

The dyad of *boundary spanning-community orientation* is associated with that of *patient orientation-medical professionalism* when the transcendence of information silos is invoked as a path to patient convenience (e.g., providing patients and physicians with unified access to all relevant data). Following a separate line of argumentation, *boundary spanning-community orientation* is similarly associated with the dyad of *cost control-economic advantage*. Several of our respondents highlighted the improved economic outcomes enabled by a more efficient flow of information within the healthcare system. The relationship between the dyads of *patient orientation-medical professionalism* and *cost control-economic advantage* presents a more nuanced association. While our findings reinforce the contention in other research (e.g., Nigam and Ocasio 2010; Reay and Hinings 2009) that medical professionalism and economic advantage represent *competing* institutional logics, we also see the potential for their common invocation. For example, when healthcare service providers argue that the degrading of *medical professionalism* (e.g., through the implementation of systems such as EHRs; *"[Providers are] being pushed. We don't want to do this … We think it's for [payers and government agencies]. It's not for us, it's for them"*) has ultimately undermined efficiency in the delivery of care. Thus, we see the defense of the medical professionalism perspective through an invocation of efficiency (i.e., *economic advantage*).

Finally, we must ask how the two institutional logics that are not represented in the dyadic pairs (i.e., *compliance* and *technical excellence*) are associated with the other logics observed. In our analysis, the logic of *compliance* is frequently associated with the logic of *economic advantage*, for example, in cases where service providers justify compliance by invoking the economic ramifications of non-compliance (*"You really don't want to leave any money on the table basically"*). *Compliance* is similarly associated with the logic of *boundary spanning* in that the rules with which compliance is expected are currently oriented toward increasing information flow across organizational boundaries, specifically through the implementation and meaningful use of EHR systems. The logic of *technical excellence* also has association with two distinct (and competing) institutional logics. We observe *technical excellence* used in association with *patient orientation-medical professionalism* when healthcare IT professionals seek the best technical solution within the constraints set by the desires of clinicians and the benefit anticipated for patients (*"IT doesn't use the EMR … We are going to help and facilitate and manage, but we are not the users"*). *Technical excellence* is associated with *cost control-economic advantage* in that the determination of technical quality frequently reflects the consideration of efficiency and ROI.

Having recognized the varied associations of institutional logics, we consider the predominance of logics amongst specific stakeholder groups. Our respondents' comments suggest that the institutional logics of *boundary spanning* and *community orientation* are embraced by nearly every class of stakeholders. Healthcare service providers, payers (i.e., insurance providers), healthcare IT professionals, information brokers (e.g., RHIOs), and government entities all reflect an emphasis in transcending information silos through collaborative effort. This emphasis is most closely associated with the information broker role, for which boundary spanning and the fostering of community is a primary objective. For all of the other institutional logics observed in our study, the degree to which they are associated with distinct stakeholder groups varies significantly. Table 2 provides a summary of these patterns of association.

We observe that institutional logics are associated in combinatorial ways with different stakeholder groups. Two logics that are in competition within the organizational field (e.g., *medical professionalism* and *economic advantage*) may reflect common associations with other distinct logics (e.g., *boundary spanning*, *technical excellence*). The ways in which these logics are used in combination has significant implications for the ways in which individuals and organizations make decisions and initiate actions with respect to their use of healthcare IT resources. These observations suggest the need for a more systems-oriented perspective on institutional logics at play in the U.S. healthcare marketplace.

Table 2. Institutional Logics and Stakeholder Groups		
Stakeholder Groups	**Institutional Logics Employed**	**Basis of Use**
Government Entities	*Compliance**	*Ensuring adherence to the legal framework*
	Cost Control	*Reducing costs in the U.S. healthcare system*
	Boundary Spanning	Promoting a nationwide health exchange
	Patient Advantage	Improving public health outcomes
Healthcare Information Brokers (e.g., RHIOs)	*Boundary Spanning*	*Increasing participation in information exchanges*
	Community Orientation	Fostering collaborative decision making
	Economic Advantage	Obtaining funding streams
Healthcare Providers	*Medical Professionalism*	*Maintaining the autonomy of medical professionals*
	Patient Orientation	*Improving patient outcomes and satisfaction*
	Compliance	Ensuring adherence to the legal framework
	Economic Advantage	Maintaining funding streams
Healthcare IT Professionals	*Patient Orientation*	*Improving patient outcomes and satisfaction*
	Technical Excellence	*Developing optimal IT solutions*
	Medical Professionalism	Ensuring system use and satisfaction of clinicians
	Economic Advantage	Achieving efficiency of systems
IT Vendors	*Economic Advantage*	*Increasing IT platform market share*
	Boundary Spanning	Promoting need for advanced IT solutions
Payers	*Cost Control*	*Reducing costs of care*
	Economic Advantage	*Improving system efficiency*
	Boundary Spanning	Increasing participation in information exchanges
	Patient Orientation	Improving patient outcomes and satisfaction
Patients	*Patient Orientation*	*Improving patient outcomes and satisfaction*
	Cost Control	Reducing costs for accessing the healthcare system

* Italicizing used to indicate institutional logics primarily employed.

Discussion

The findings from our research have a number of significant implications for both practice and research. In the domain of practice, this research calls attention to critical considerations for efforts at redesign of the U.S. healthcare system through the adoption and use of IT resources. Most notably, we find that these efforts must recognize the potential for countervailing institutional forces with IT adoption. In the research domain, the research suggests the value a more nuanced and systems-oriented approach to

analysis of institutional logics within an organizational field.

Implications for Practice

Of the institutional logics that we observed, the paired logics of *boundary spanning-community orientation* appear to have the broadest base of appeal. Respondents from all stakeholders groups perceive substantial value in moving beyond traditional information silos and in embracing collaborative approaches to delivering healthcare services. Importantly, the reasons for which this underlying logic is employed (i.e., other logics with which respondents invoke *boundary spanning* and *community orientation*) vary widely, with some respondents arguing that boundary spanning will enhance quality of care (*patient orientation*) while other emphasize its impact on *cost control* and system efficiency (*economic advantage*). Nevertheless, the widespread adoption of this logical dyad suggests that may represent a critical common ground in promoting reform of the healthcare system.

On the question of efficiency, our analysis suggests a critical consideration of "c*ui bono*?" The argument behind governmental initiatives for greater adoption of EHR systems is fairly clear:. through improved data integration across the healthcare domain, the U.S. will engender a range of benefits, including reduced medical errors and unnecessary replication of work, improved access to relevant clinical information, more personalized care, and better public health outcomes. Ultimately, the logics espoused center around control of spiraling healthcare costs and improved efficiency (i.e., economic advantage). The question that remains is who benefits from the efficiency that EHRs create? Or, perhaps more to the point, what *types* of efficiency are relevant in this evaluation?

Our analysis suggests that EHR platforms promise (and, indeed, deliver) greater efficiency around records management, billing, medication management, and inter-organizational exchange. Through the implementation of reporting standards (e.g., HL7), clinical support, procedure documentation, and bill submission, the EHR platforms reduce many common errors and redundant data entry. However, these platforms introduce a range of process-based changes which have the potential to undermine or overwhelm the perceived efficiency gains. For example, the healthcare providers in our study expressed concern regarding the impact of EHRs on the efficiency of treating patients. They assert that such platforms often represent an impediment in the physician-patient relationship through the overlay of a data management orientation and by overwhelming the physician with information of limited clinical value. These observations reflect the extant research on EHR adoption (e.g., O'Malley et al. 2010; Shachak and Reis 2009). The resulting impression is that EHR adoption may enhance efficiency of healthcare payers and administrators while simultaneously undermining that of physicians. For physicians, the issue of usability is paramount. As our respondents suggested, EHR resources are only valuable to the degree that the facilitate communication, both between distinct service providers and between the patient and the physician. Thus, the challenge for the architects of a new U.S. healthcare system is to create a system of incentives (e.g., through meaningful use guidelines) that fosters effective communication and value for physicians and patients.

A third (albeit, related) observation pertains to the issue of competing institutional logics. In line with earlier research (Nigam and Ocasio 2010; Reay and Hinings 2005), we find the potential for conflict between the logics of *medical professionalism* and *economic advantage*. While some research suggests that these conflicting logics can co-exist (Reay and Hinings 2009), it is reasonable to ask whether or not the promotion of EHR platforms will impact the relative prevalence of the two logics. The preceding observation suggests that EHR adoption may inadvertently augment a logic of *economic advantage* and undermine that of *medical professionalism*. The issue for healthcare professionals and public policy makers is that this potential shift should be evaluated explicitly – recognizing the impacts that increased IT adoption may have for healthcare service delivery. In this regard, we do not make a normative claim with respect to the relative value of the competing logics. Rather, we argue that the institutional logics perspective can foster an understanding of the potential systemic implications of health IT promotion.

Implications for Research

This study indicates a range of important questions for future research. Within the healthcare domain, the study underscores the need for attention to the institutional shifts that EHR and other health IT adoption

may foster. As with the shifts in institutional logics identified in earlier periods (Nigam and Ocasio 2010; Scott et al. 2000) and other national contexts (Currie and Guah 2007), our study suggests that efforts to create a more IT-enabled U.S. healthcare system are likely to alter prevailing institutional logics and organizational structures. Such alterations will warrant continued research as the envisioned future of "meaningful use" comes to fruition. Relevant questions include: How does the movement toward greater integration of health records across geographic ranges impact the prevailing institutional logics in healthcare? How will these changes impact the organizational structures of stakeholders?

One facet of this transitional period which has received little attention to date is the role of EHR vendors. While it was not a core focus of our present analysis, a number of our respondents expressed concerns that the growing dominance of specific platforms within a regional hospital market would create a monopoly effect wherein hospitals and individual practices would have little choice in EHR platform selection. This fear is augmented by governmental requirements for EHR certification which effectively prohibit in-house development of EHR systems. This raises a series of critical research questions: What role do EHR vendors have in shaping the institutional logics of the healthcare field? To what degree do various EHR features impact the balance of power amongst stakeholders? What impact would vendor consolidation have on healthcare system outcomes?

Outside of a strict focus on healthcare, this research calls attention to the value of a systems-oriented perspective on institutional logics within an organizational field. Rather than focusing on dichotomous logics in competition, we could benefit by analyzing the ways in which various logics are invoked in combination or the interactions of both complementary and conflicting institutional logic. Indeed, the development of such a systems-oriented perspective on institutional logics is one of our key objectives with the present program of research.

Limitations

While we believe that this analysis provides an insightful exploration of the institutional logics in the U.S. healthcare market, a number of limitations should be acknowledged. First, while the research aims for analytical generalizability (Eisenhart 2008) rather than probabilistic generalizability, the degree to which our respondents are representative of the broader field of healthcare is a valid question. We have sought to enhance the external validity of our findings by fostering participation from individuals representing multiple stakeholder groups in the evolving U.S. healthcare field, rather than limiting the study to one class of respondents (e.g., healthcare service providers). However, the generalizability of our theoretical insights to the broader field is a legitimate question for future research. Furthermore, we have been careful to note that our findings pertain to the U.S. healthcare system. Given the idiosyncrasies of national health systems and the current state of regulatory and practical flux in the U.S. context, we feel it is important to be explicit about the boundaries of our analysis.

Secondly, because of the interpretive nature of the analyses, this research reflects a "double hermeneutic" process (Giddens 1984). We have sought to interpret the reflections of respondents who were in turn communicating their interpretations of their day-to-day experiences within the healthcare domain. As a result, we are two stages removed from the actual phenomena that we seek to analyze. We have sought to mitigate this limitation by incorporating documentary review of artifacts (i.e., reports, medical histories). Nevertheless, the potential for misinterpretation of the underlying phenomena is a valid consideration.

Conclusion

In this study, we have analyzed the adoption of IT resources within the evolving U.S. healthcare system using the perspective of institutional logics. Specifically, we have focused on the impact of increased adoption of EHRs and other health IT solutions on the interactions between diverse healthcare stakeholders and the values and objectives driving EHR adoption. Our findings reveal a wider range of observable institutional logics than have been discussed in previous research on the healthcare field. We see evidence of both conflicting and complementary logics at work in the move to a more IT-intensive healthcare market. This research offers a number of significant contributions. Within the healthcare domain, our study calls attention to institutional logics (e.g., *boundary spanning* and *community orientation*) that may unite diverse healthcare stakeholders around a common vision of reform. We also

observe conflicting logics (e.g., *medical professionalism* and *economic advantage*) whose relative prevalence is likely to be impacted with growing EHR adoption. Beyond the healthcare domain, this research highlights the value of framing institutional logics in a more systems-oriented fashion than has been employed in previous research.

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